INTRODUCTION

It is sometimes desirable to cut parts to, for example, reveal the interior of a solid or remove unwanted or unneeded portions of a model. EnSight can cut any server-based part and either keep both "sides" or discard one. Any of the 3D tools (Plane or Quadric) can be used as the cutting surface.

The cut operation produces dependent copies of the parent part. The part(s) resulting from a cut are completely valid parts consisting of standard elements types. These parts can be used for any operation – including further cuts.

BASIC OPERATION

To cut a part:

1. **Select the part(s) in the Main Parts list.**

2. **Position the desired cutting tool (Plane, Cylinder, Sphere, Cone, or Surface of Revolution) in the desired location.**

3. **To keep both sides of the cut as parts, select Edit > Part > Cut & Split.**

   – OR –

3. **To keep only the "front" side of the resulting cut, select Edit > Part > Cut & Remove.**

For the Plane tool, the front is the positive Z side of the tool. For the quadric tools, the inside of the tool is the front and the outside is the back. In the Main Parts list, the original part remains and cannot be deleted without also deleting the cut parts (but can easily be made invisible if desired). If Cut & Split was used, two new parts are added to the end of the Main Parts list with the same name as the original part with "+" added to the name of the front part and "–" appended to the name of the back part. If Cut & Remove was used, one new part is created with "+" added to the beginning of the name.

OTHER NOTES

A part copy cannot be cut. However, if the parent of the copy is cut, the copy will be cut as well (since part copies share geometry with the parent).

The cut operation maintains the order of the elements, *e.g.* 3D elements yield 3D elements and 3D quadric elements yield 3D quadric elements.

The cut algorithm breaks elements intersecting the cutting surface into tetrahedrons. Since there is no transition zone created between these tetrahedrons and their non-cut neighbors, non-shared element faces are possible. These non-shared faces can result in undesired lines and/or elements during border and/or feature angle representations.

If you cut a structured (IJK) part the resulting parts will be unstructured.

SEE ALSO

User Manual: **"Part Operations"**